USGS science for a changing world

Earthquake Shaking — Red Alert

GSN ANSS USAID FROM THE AMERICAN PEOPLE

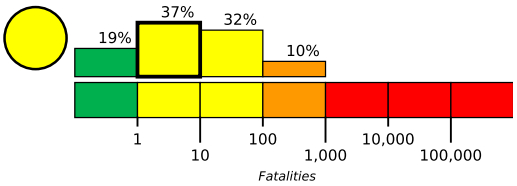
# M 5.8, 19km S of Changning, China

Origin Time: 2019-06-17 14:55:45 UTC (Mon 22:55:45 local)
Location: 28.4051° N 104.9572° E Depth: 10.0 km

**PAGER Version 8**

Created: 1 day, 0 hours after earthquake

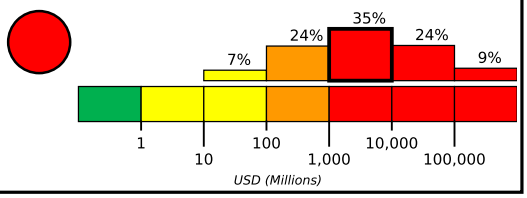
## Estimated Fatalities




Red alert for economic losses. Extensive damage is probable and the disaster is likely widespread. Estimated economic losses are less than 1% of GDP of China. Past events with this alert level have required a national or international level response.

Yellow alert for shaking-related fatalities. Some casualties are possible.

## Estimated Economic Losses

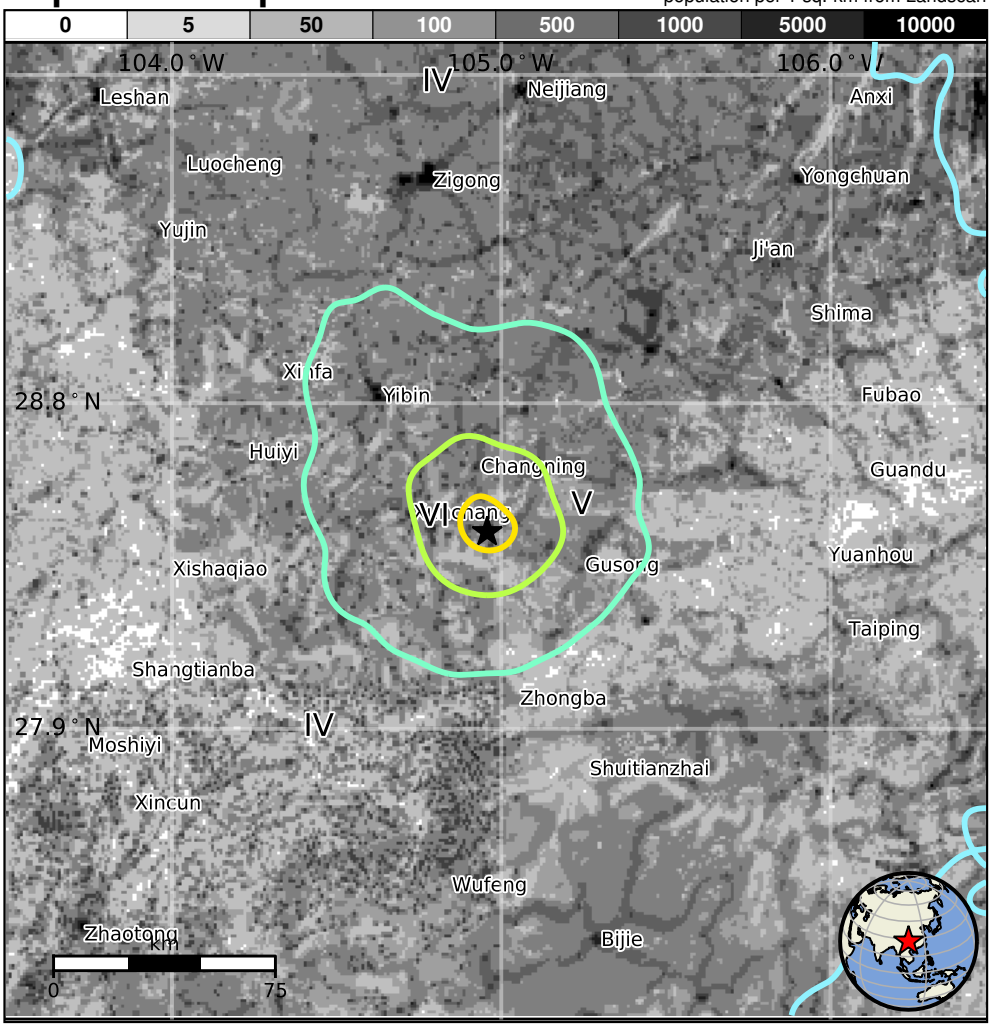



## Estimated Population Exposed to Earthquake Shaking

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ESTIMATED POPULATION EXPOSURE (k=x1000) | | –* | 1,930k* | 26,818k* | 3,052k | 598k | 149k | 0 | 0 | 0 |
| ESTIMATED MODIFIED MERCALLI INTENSITY | | I | II-III | IV | V | VI | VII | VIII | IX | X+ |
| PERCEIVED SHAKING | | Not felt | Weak | Light | Moderate | Strong | Very Strong | Severe | Violent | Extreme |
| POTENTIAL DAMAGE | Resistant Structures | None | None | None | V. Light | Light | Moderate | Mod./Heavy | Heavy | V. Heavy |
| | Vulnerable Structures | None | None | None | Light | Moderate | Mod./Heavy | Heavy | V. Heavy | V. Heavy |

*Estimated exposure only includes population within the map area.

## Population Exposure




### Structures

Overall, the population in this region resides in structures that are vulnerable to earthquake shaking, though resistant structures exist. The predominant vulnerable building types are unreinforced brick with mud and adobe block construction.

### Historical Earthquakes

| Date (UTC) | Dist. (km) | Mag. | Max MMI(#) | Shaking Deaths |
|---|---|---|---|---|
| 1985-04-18 | 345 | 5.7 | VIII(6k) | 22 |
| 1976-11-06 | 397 | 6.3 | VIII(3k) | 33 |
| 1974-05-10 | 97 | 6.8 | IX(23k) | 2k |

Recent earthquakes in this area have caused secondary hazards such as landslides that might have contributed to losses.

### Selected City Exposure

from GeoNames.org

| MMI | City | Population |
|---|---|---|
| VI | **Changning** | **<1k** |
| VI | **Xunchang** | **65k** |
| V | Qingfu | <1k |
| V | Zhongcheng | <1k |
| V | **Yibin** | **242k** |
| V | **Gusong** | **<1k** |
| IV | **Zigong** | **690k** |
| IV | **Neijiang** | **547k** |
| IV | **Yongchuan** | **94k** |
| IV | **Zhaotong** | **109k** |
| IV | **Leshan** | **154k** |

bold cities appear on map. (k=x1000)



**https://earthquake.usgs.gov/earthquakes/eventpage/us600041ry#pager**

**Event ID: us600041ry**